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The Second Victim: Knowledge for the Healthcare Team

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Abstract

Adverse patient events can have lasting and traumatic effects on members of the healthcare team. In 2019, a Southern California healthcare organization developed a peer support program for second victims (SVs). Despite this program being available to all staff, many nurses in the neonatal intensive care unit (NICU) of a metropolitan area entity did not know the program existed. The purpose of this study was to provide education to NICU nurses about second victims and the organization's peer support program through an online learning module. Participants completed a survey upon module completion. The survey used a simultaneous pre-post survey on nurses' knowledge, skills, and attitudes of second victims and the organization's peer support program. Ten out of 11 survey items were statistically significant. Of the respondents, 89% of nurses had not sought peer support following a traumatic patient event. After completing the learning module, 67% of nurses shared they were likely or very likely to seek peer support in the future. Improvement for the dissemination of information about second victims must occur for nurses to recognize themselves as second victims. Due to the ease of accessibility to online learning, the learning module can be shared with other entities within the organization.

The Second Victim: Knowledge for the Healthcare Team

Background

In healthcare, when an adverse patient event occurs, the patient is always the first victim. However, in these instances, the patient may not be the only traumatized party. Healthcare providers may also experience trauma from adverse patient events; these traumatized individuals are known as second victims (Burlison et al., 2018, 2018; Wu, 2000).

In 2000, Dr. Albert Wu coined the term “second victim” for health care providers involved in an unanticipated adverse patient event and are subsequently traumatized by the event (Burlison et al., 2018; Wu, 2000). Scott et al. (2009) expanded the definition of the second victim as a healthcare provider who becomes traumatized after exposure to an unanticipated adverse patient event including a medical error or a patient-related injury.

Evidence has shown that following a traumatic patient event, second victims prefer peer support from a trusted colleague to help them work through the event (Burlison et al., 2017; Coughlan et al., 2017). In November 2019, a southern California healthcare organization implemented a system-wide second victim peer support program with the goal of decreasing the effects of the second victim phenomenon.

Problem

The stressful environment and nature of work in the neonatal intensive care unit (NICU) puts this population of nurses at risk of becoming a second victim (Barr, 2018; Favrod et al., 2018; Woo et al., 2020; Zhang et al., 2018). Nurses will often internalize these feelings and will not seek support from others; this may be due to pride, shame, guilt, or a myriad of other feelings (Favrod, 2018). During the implementation and data

collection period of the study, there were three trained peer support leaders for the second victim support program in the NICU. These leaders include the NICU clinical nurse specialist and two clinical supervisors.

Despite this program being available systemwide, many nurses in the unit were not aware of the program's existence. To increase knowledge of the second victim phenomenon and the organization's peer support program, an online learning module was created. Researchers have found that digital education can be an effective way to disseminate information (Kyaw et al., 2019).

The following PICOT question was posed: In neonatal intensive care nurses, does completion of a second victim phenomenon and peer support program learning module increase the knowledge, skills, and attitudes of the module topics when compared to NICU nurses who do not complete an educational module?

Purpose & Scope

The purpose of this study is to provide education to NICU nurses on the second victim phenomenon and the organization's peer support program. Scores from a simultaneous pre-post module survey will measure nurses' knowledge, skills, and attitudes over the module topics. Additional questions will explore the current level of use and future likelihood of use of the peer support program.

The original scope of this study was to evaluate peer supporter interactions for effectiveness. However, during development, it was found that NICU nurses did not know the peer support program existed. Before encouraging NICU nurses to seek peer support through the program, education about the second victim phenomenon and the peer support program must be disseminated first.

Goals. The goals of the online learning module are to (1) increase NICU nurse knowledge of the second victim phenomenon, (2) increase NICU nurse knowledge of the organization's peer support program, and (3) improve Second Victim Experience and Support Tool (SVEST) scores in the psychological distress dimension.

EBP Model

Evidence-based practice (EBP) models influence change within an organization by helping leaders organize their thinking and understand how various aspects of EBP work and influence implementation approaches (Melnik & Fineout-Overholt, 2019). This study used the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model as a guiding framework. This model uses a problem-solving approach (practice question, evidence, and translation) that integrates the best available scientific evidence with the best available experiential evidence (Dang & Dearholt, 2017). The JHNEBP also considers the internal and external influences on practice and encourages critical thinking and its effect on the individual, population, or system where it is applied (Dang & Dearholt, 2017).

Evidence and best practice support providing an educational module to improve the knowledge, skills, and attitudes of a specific topic (Kyaw et al., 2019). It is also important to remember the practice improvements component of the JHNEBP Model and regularly circle back to the inquiry phase to maintain current and best practices (Dang & Dearholt, 2017). In this case, if the online learning module does not prove effective in increasing the knowledge, skills, and attitudes about the second victim phenomenon and the healthcare organization's peer support program, the principal investigator will need to develop another method for dissemination.

Literature Review

The literature review focused on the background, symptoms, effects of the second victim phenomenon, benefits of peer support programs, and the benefits of online learning. The literature search included the Cumulative Index to Nursing and Allied Health, Medline, and Google Scholar. Key terms used were: second victim, adverse events, medical error, patient safety, burnout, resilience, coping, and online learning. The literature search included all types of healthcare team members; a more detailed search looked at NICU nurses specifically.

The Second Victim

When an adverse patient event occurs, the patient and/or their family members are always the first victims (Nydoo et al., 2019; Wu, 2000). However, the adverse event could also have an effect on the healthcare providers involved, known as the second victims (Nydoo et al., 2019; Wu, 2000). The literature utilized the original and expanded definitions of second victims, which are healthcare providers who are involved in a traumatic patient event and are subsequently traumatized by the event (Scott et al., 2009; Wu, 2000). Additional definitions for the second victim phenomenon describe “unbidden disturbing thoughts of work-related trauma, [and] feeling infected by others’ trauma...” (Barr, 2018, pp. 771–772). The second victim often feels personally responsible and that they have failed the patient (Burlison et al., 2017). The literature focused extensively on describing the negative psychological effects and the need for organizational support for second victims.

Symptoms and Effects

Second victims can experience a myriad of psychological and physical symptoms. Psychological symptoms include, but are not limited to, anger, irritability, depression, fear, feelings of numbness, flashbacks, frustration, isolation, self-doubt, guilt, lack of clinical confidence, and a loss of interest to return to work (Burlison et al., 2017; Nydoo et al. 2019; Scott et al., 2009). The second victim may also fear detrimental effects to their reputation and legal ramifications (Wu, 2000). In some cases, the second victim may develop posttraumatic stress disorder and never fully recover from the event (Scott et al., 2009). Physical symptoms that second victims may experience include, but are not limited to, difficulty concentrating, eating disturbances, fatigue, headache, muscle tension, nausea, vomiting, rapid breathing, rapid heart rate, and sleep disturbances (Burlison et al., 2017; Nydoo et al., 2019; Scott et al., 2009).

Consequences. The feelings, signs, and symptoms that a second victim may feel can last from a few days to weeks to months, sometimes longer. If the second victim does not receive peer support, the aftermath can be disastrous to the clinician's personal and professional life. Without adequate support, the second victim may feel further isolation, trauma, low morale, prolonged suffering, and impaired job performance (Burlison et al., 2017; Coughlan et al., 2017; Nydoo et al., 2019). In many instances, these poor outcomes have led to job burnout, absenteeism, career changes, and even suicide because of the event and a subsequent lack of adequate support (Davidson et al., 2020; Woo, 2020). These consequences can be mitigated if second victims receive timely and adequate support (Burlison et al., 2017; Coughlan et al., 2017; Davidson et al., 2020).

Second Victim Support Programs

Several studies highlighted the emotional symptoms second victims can experience and the lack of support for these individuals through surveys to demonstrate why support programs are needed (Edrees et al., 2016; Scott et al., 2009). Burlison et al. (2017) surveyed healthcare providers and found that following a traumatic patient event, these providers preferred the ability to discuss the situation and their feelings with a trusted peer or manager. Participants of this study also shared the desire for counselors and that these support systems should be available and accessible at any time of the day or night. The authors developed the SVEST, “a survey instrument that can assist healthcare organizations to implement and track the performance of second victim support resources” (para. 3).

Studies also support the implementation and utilization of second victim peer support programs to minimize the effects and symptoms second victims experience (Chan et al., 2017; Coughlan et al., 2017; Edrees et al., 2016; Nydoo et al., 2019). In 2011, Johns Hopkins Hospital developed the Resilience in Stressful Events program to complement the existing Employee Assistance Program and support healthcare providers’ pre- and post-adverse events, helping the provider achieve resilience (Edrees et al., 2016). After an adverse event, a RISE team peer responder meets with the healthcare provider to focus on their emotional response through reflective listening and offering a list of available support services (Edrees et al., 2016).

A small number of healthcare organizations have developed and implemented second victim support programs; however, the extent of these services are often limited (Mira et al., 2017). Burlison et al. (2017) argued that there is an immediate need for all

healthcare organizations to invest and implement support programs and resources for second victims. The literature suggested further research to evaluate the effectiveness of these support programs (Scott et al., 2009).

NICU Nurses

The NICU is a unique environment because of the challenging patient population it serves of premature and critically ill infants (Moore & Schellinger, 2018). It can be an overwhelming place for infants, parents, and healthcare workers. Due to the high-stress environment, NICU nurses are susceptible to becoming second victims because of their exposure to traumatic events and ethical dilemmas (Barr, 2018; Klein et al., 2017; Moore & Schellinger, 2018).

This population of nurses may experience the “reliving [of] terror, grief, and yearning through their empathic engagement with their patients” (Moore & Schellinger, 2018, p. 276). As a result, nurses have reported symptoms associated with the second victim phenomenon such as headaches, depression, nightmares, and moral suffering due to the trauma they experienced at work (Braithwaite, 2008; Moore & Schellinger, 2018).

Online Learning

The literature supports online learning as an effective way to disseminate information (Kyaw et al., 2019; Mira et al., 2017). Kyaw et al. (2019) conducted a systematic review and meta-analysis to evaluate the effectiveness of digital education. The authors found that digital education is as effective as traditional learning methods.

Mira et al. (2017) created a resource website for second victims to educate healthcare providers about the second victim phenomenon and how to seek support at their organization when coping after a traumatic patient event. The authors found that

online learning and support programs are beneficial to educate healthcare providers about the second victim phenomenon (Mira et al., 2017). Online learning has the added benefit of providing learners and second victims with access to resources and help validate their feelings after experiencing a traumatic patient event (Mira et al., 2017).

Methods

Institutional Review Board approvals were obtained from the organization and University of San Diego in July 2020 and May 2020, respectively. The web-based program Articulate Rise was used to create an online learning module (OLM) about the second victim phenomenon, the organization's peer support program, and links to unit resources. The pre-post module survey was created using Zoho Surveys and was added to the end of the OLM.

This study was conducted using a convenience sample of NICU RNs from August through October 2020 at a women and newborns delivery hospital in San Diego County. The hospital offers a wide range of services that include delivery, obstetrics, nursery, and a Level III NICU. Participants were registered nurses in the NICU who provided direct patient care. Approximately 200 nurses from the NICU were invited to learn about the second victim phenomenon and the organization's peer support program through the OLM and fill out the anonymous survey afterward. Nurses received an electronic invitation with a link to the OLM in three ways: in the NICU manager's weekly staff newsletter, the Unit Practice Council's quarterly e-newsletter, and in the unit's webpage through the institution's Intranet. Participants accessed the OLM and survey at their convenience from any internet-connected computer. Within the survey instructions, nurses were informed that participation was optional and anonymous.

From the pool of 200 nurses, 54 completed the survey. Of the 54 participants, 31 nurses had been a NICU nurse for 9 years or less; the remaining 23 participants had been a NICU nurse for 10 or more years. NICU RNs who wanted to learn about second victims and the organization's peer support program received the same education, but data analysis was limited to participants who chose to complete the pre-post module surveys. Consent was not obtained because participation was implied through survey completion.

Survey

For this study to be successful, the information regarding the second victim phenomenon and the organization's peer support program had to be disseminated in an effective manner to NICU nurses. Given the time constraints during any given shift, the information had to be presented in a manner that would not take away too much time from a nurse's duties to their patients.

Considering the time constraints that NICU nurses may be under, the survey at the end of the OLM was split into two sub-surveys, "Before the Module" and "After the Module." The "Before the Module" survey items comprised of 11 questions about the NICU nurse's knowledge, skills, and attitudes of second victims and the organization's peer support program. The "After the Module" survey items comprised of the same 11 questions from the "Before the Module" survey, one demographic question, and two questions regarding peer support program usage (see Table 1). Within the survey, questions of NICU nurses' knowledge, skills, and attitudes about second victims and the organization's peer support program used a 5-point Likert scale.

Knowledge

The Knowledge section of the pre-post module surveys examined nurses' knowledge of the following: (1) the second victim phenomenon, (2) symptoms of the second victim phenomenon, (3) effects of the second victim phenomenon, and (4) awareness of the organization's peer support program. A Likert scale was used: 1 - not at all aware, 2 - slightly aware, 3 - moderately aware, 4 - very aware, and 5 - extremely aware.

Attitudes

The Attitudes section of the pre- and post-module surveys examined nurses' attitudes of the following: (1) embarrassment, (2) fear of future occurrences, (3) misery, and (4) remorse in past involvements in relation to the second victim phenomenon. A Likert scale was used: 1 – strongly disagree, 2 - disagree, 3 – neither agree nor disagree, 4 - agree, and 5 – strongly agree.

SVEST: Psychological Distress Dimension. The SVEST is a reliable and valid instrument that can be used to guide the implementation of second victim resources, assess the quality of support resources, and track the performance of second victim programs over time (Burlison et al., 2017). The SVEST comprises of seven dimensions and two outcome variables:

1. Psychological distress
2. Physical distress
3. Colleague support
4. Supervisor support
5. Institutional support

6. Non-work-related support
7. Professional self-efficacy
8. Turnover intentions (outcome variable)
9. Absenteeism (outcome variable, Burlison et al., 2017).

The Cronbach's alpha reliability scores from each dimension and outcome variable ranged from 0.61 to 0.89 (Burlison et al., 2017). The Cronbach's alpha reliability score for the psychological distress dimension of the SVEST is 0.83 and the confirmatory analysis score is 0.91 overall, indicating good internal consistency (Burlison et al., 2017). The authors also calculated the Cronbach's Alpha Reliability Score for individual questions. Table 2 displays the reliability scores.

Skills

The Skills section of the pre-post module surveys examined nurses' skills of the following: (1) recognizing themselves as a second victim, (2) recognizing a coworker as a second victim, and (3) utilizing the organization's peer support program. A Likert scale was used: 1 – very poor, 2 - poor, 3 - fair, 4 - good, and 5 - excellent.

Data Analysis

A consulting statistician completed the data analysis of the results using Intellectus Statistics. Two-tailed Wilcoxon and paired samples *t* tests were conducted to examine pre-post survey relationships among variables in the study questions. The two-tailed Wilcoxon is a non-parametric alternative to the paired samples *t* test and does not share its distributional assumptions (Conover & Iman, 1981).

Results

Knowledge

Two-tailed Wilcoxon signed rank tests showed that there was a significant difference between three of the four pre-post module knowledge questions.

The Second Victim Phenomenon

The results of the two-tailed Wilcoxon signed rank test were not significant based on an alpha value of 0.05, $V = 248.00$, $z = -0.62$, $p = .533$. The median pre-module knowledge was 2.00 and post-module knowledge was 3.00 and likely due to random variation. Figure 1 presents a boxplot of the ranked values of pre-post survey knowledge of the second victim phenomenon. Figure 2 presents a visual comparison of the individual data points from the Likert scale.

Symptoms of the Second Victim Phenomenon

The results of the two-tailed Wilcoxon signed rank test for pre-post survey knowledge of symptoms of the second victim phenomenon were significant based on an alpha value of 0.05, $V = 37.50$, $z = -5.62$, $p < .001$. These results indicate differences between pre-post module survey knowledge are not likely due to random variation. The pre-survey knowledge median ($Mdn = 2.00$) was significantly lower than the post-module survey knowledge median ($Mdn = 4.00$), indicating that participating NICU nurses were not familiar with the symptoms of the second victim phenomenon prior to completing the OLM. Figure 3 presents a boxplot of the ranked values of pre-post module knowledge of symptoms of the second victim phenomenon.

Effects of the Second Victim Phenomenon

The results of the two-tailed Wilcoxon signed rank test for knowledge of the effects of the second victim phenomenon were significant based on an alpha value of 0.05, $V = 68.00$, $z = -5.35$, $p < .001$ (Figure 4). These results indicate that the differences between pre-post module survey knowledge are not likely due to random variation. The pre-survey knowledge median ($Mdn = 2.00$) was significantly lower, indicating that participating NICU nurses were slightly aware, than the post-survey knowledge median ($Mdn = 4.00$). These results suggest that participating NICU nurses became very aware of the effects of the second victim phenomenon upon completing the OLM. Figure 4 presents a boxplot of the ranked values of pre-post module survey knowledge of effects of the second victim phenomenon.

Peer Support Program

The results of the two-tailed Wilcoxon signed rank test for pre-post module knowledge of the organization's peer support program were significant based on an alpha value of 0.05, $V = 27.00$, $z = -5.65$, $p < .001$ (Figure 5). These findings indicate that differences between pre-post module knowledge of the peer support program are not likely due to random variation. The pre-survey knowledge median ($Mdn = 2.00$) was significantly lower than the median of the post-survey knowledge median ($Mdn = 4.00$), which indicates that participating NICU nurses were slightly aware of the peer support program but became very aware of it after completing the online learning module. Figure 5 presents a boxplot of the ranked values of pre-post module knowledge of the organization's peer support program.

Overall Knowledge

A two-tailed paired samples t test was conducted to examine whether the mean difference of pre-post module knowledge survey responses was significantly different from zero. A Shapiro-Wilk test determined that the results were not significant based on an alpha value of 0.05, $W = 0.96$, $p = .101$. This result suggests the possibility that the differences in pre-post module knowledge survey responses were produced by a normal distribution, cannot be ruled out, indicating the normality assumption is met.

Levene's test assessed whether the variances of pre-post module survey knowledge responses were significantly different. The result of Levene's test was not significant based on an alpha value of 0.05, $F(1, 106) = 1.87$, $p = .174$. This finding suggests it is possible that pre-post-module survey knowledge responses were produced by distributions with equal variances, which indicates the assumption of homogeneity of variance was met.

The result of the two-tailed pair samples t test was significant based on an alpha value of 0.05, $t(63) = -18.04$, $p < .001$, indicating the null hypothesis can be rejected. This suggests the difference in the mean of pre-survey knowledge and the mean of post-module survey knowledge was significantly different from zero (see Table 3). Figure 6 presents a bar plot of the means.

Attitudes

Two-tailed Wilcoxon signed rank tests showed that there was a significant difference between the four pre-post module attitude questions.

Embarrassment

The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 290.00$, $z = -3.00$, $p = .003$ (see Figure 7). These results indicate that the differences between pre-post module embarrassment from adverse patient events are not likely due to random variation. The median of pre-module ($Mdn = 4.00$) was significantly lower than the median of the post-module ($Mdn = 4.00$). Figure 7 presents a boxplot of the ranked values of pre-post module survey attitude of embarrassment from adverse patient events.

Fear of Future Occurrences

The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 232.00$, $z = -3.54$, $p < .001$ (see Figure 8). These results indicate that the differences between pre-post attitudes of fear of future occurrences are not likely due to random variation. The median of pre-module fear ($Mdn = 4.00$) was significantly larger than the median of post-module fear ($Mdn = 3.00$). Figure 8 presents a boxplot of the ranked values of pre-post module attitude of fear of future occurrences.

Misery

The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 205.00$, $z = -2.11$, $p = .034$. This indicates that the differences between pre-post module attitudes of misery are not likely due to random variation. The median of pre-module misery ($Mdn = 4.00$) was significantly larger than the median of post-module misery ($Mdn = 3.00$). Figure 9 presents a boxplot of the ranked values of pre-post module attitude of misery.

Remorse in Past Involvements

The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 278.50$, $z = -3.24$, $p = .001$. These results indicate that the differences between pre-post module attitudes of remorse in past involvements are not likely due to random variation. The median of pre-module remorse ($Mdn = 4.00$) was significantly larger than the median of post-module remorse ($Mdn = 3.00$). Figure 10 presents a boxplot of the ranked values of pre-post module attitude of remorse in past involvements.

Overall Attitudes

A two-tailed Wilcoxon signed rank test examined whether there was a significant difference between pre-post module attitudes. The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 542.00$, $z = -3.30$, $p < .001$. These results indicate the differences between pre-post module attitudes are not likely due to random variation. The median of pre-module attitudes ($Mdn = 4.00$) was significantly larger than the median of post-module attitudes ($Mdn = 3.50$). Figure 11 presents a boxplot of the ranked values of pre-post module attitudes.

Skills

Two-tailed Wilcoxon signed rank tests showed that there was a significant difference between the three pre-post module skills questions.

Recognizing Oneself as a Second Victim

The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 162.00$, $z = -2.99$, $p = .003$. These results indicate that the differences between pre-post module skills of recognizing oneself as a second victim are

not likely due to random variation. The median of pre-module skills of recognition ($Mdn = 3.00$) was significantly lower than the median of post-module skills of recognition ($Mdn = 3.00$). Figure 12 presents a boxplot of the ranked values of pre-post module skills of recognizing oneself as a second victim.

Recognizing a Coworker as a Second Victim

The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 677.00$, $z = -2.21$, $p = .027$. These results indicate that the differences between the pre-post module skill of recognizing a coworker as a second victim are not likely due to random variation. The median of pre-module skills of recognition ($Mdn = 3.00$) was significantly larger than the median of post-module skills of recognition ($Mdn = 2.00$). Figure 13 presents a boxplot of the ranked values of pre-post module skills of recognizing a coworker as a second victim.

Utilizing the Peer Support Program

The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of 0.05, $V = 6.00$, $z = -5.97$, $p < .001$. These results indicate that the differences between the pre-post module skill of utilizing the peer support program are not likely due to random variation. The median of pre-module skills of utilization ($Mdn = 2.00$) was significantly lower than the median of post-module skills of utilization ($Mdn = 5.00$). Figure 14 presents a boxplot of the ranked values of pre-post module skills of utilizing the organization's peer support program.

Overall Skills

A two-tailed Wilcoxon signed rank test examined whether there was a significant difference between pre-post module skills. The results of the two-tailed Wilcoxon signed

rank test were significant based on an alpha value of 0.05, $V = 0.00$, $z = -6.10$, $p < .001$.

These results indicate that the differences between pre-post module skills are not likely due to random variation. The median of pre-module skills ($Mdn = 2.67$) was significantly larger than the median of post-module skills ($Mdn = 4.33$). Figure 15 presents a boxplot of the ranked values of pre-post module skills

Additional Post-Module Survey Questions

Demographics

The demographic question in the post-module section of the survey asked participants how long they have been a NICU nurse. Figure 16 presents the demographic data. Fifty-seven percent of respondents had been a NICU nurse for 9 years or less, and the remaining 43% have been a NICU nurse for 10 or more years.

Peer Support Program Utilization and Likelihood of Use

In the post-module section of the survey, participants were asked about their utilization of the peer support program (Figure 17) and the likelihood that they will seek support through the peer support program in the future (Figure 18).

For program utilization, 48 out of the 54 respondents indicated they had never sought support from a peer support leader, five had sought support once, one nurse had sought support once, and no respondents had sought peer support five or more times. After completing the OLM, 67% of respondents indicated they were either likely or very likely to seek peer support in the future, 11% were not likely or very unlikely to seek peer support, while the remaining 22% percent of respondents remained neutral in seeking peer support in the future.

Discussion

The survey results showed that following online education, NICU nurses' knowledge, skills, and attitudes about second victims and the organization's peer support program increased and improved.

Fifty-four out of over 200 NICU nurses on the unit participated in the survey, and thus completed the OLM. For the remaining 150 nurses on the unit, they may not have viewed the OLM due to personal choice, not having enough time during their shift, or they may have felt fear or embarrassment from their peers. It is unknown how many nurses completed the OLM without completing the survey. These nurses may not have had time to complete the survey during their shift or may have declined to participate.

Knowledge, Skills, and Attitudes

Table 4 brings all the pre-post knowledge, skills, and attitudes questions and displays the z scores and p values. The first question, knowledge of the second victim phenomenon was not statistically significant, indicating that participating NICU nurses had previously heard of the second victim phenomenon. The results from the knowledge section of the survey show that nurses learned about the symptoms and effects of the second victim phenomenon, as well as the organization's peer support program. The comparison between pre-post module survey responses in attitudes and skills showed improvements.

Benefits

The second victim phenomenon is a significant issue that warrants attention and action from healthcare organizations to benefit the healthcare team. While this study focused on NICU nurses, any member of the team can experience second victim

symptoms. By completing the OLM, NICU nurses may have increased knowledge and skills to identify themselves and others as second victims, and improved attitudes about the second victim phenomenon and the organization's peer support program. For sustainment, a link to the OLM will remain in the organization's NICU Intranet page.

Risks

Risks for this study include a continued sense of fear from nurses after completing the module. This may be due to challenging boundaries between the peer support leader and the nurse seeking support, fear of retaliation from leadership, or fear of litigation (Coughlan et al., 2017; Nydoo et al., 2019).

Limitations

The results of this study are limited by focusing on one nursing specialty at one unit in a healthcare organization with many entities. Additional limitations include the use of a convenience sample, the response rate, and that the study did not allow for a comparison of nurses in different levels of NICUs or other hospital units. Future studies should consider other units and hospitals, as well as other education methodologies that might tap into a broader sample. Because of the length of the SVEST, only one dimension of the seven in the instrument was used, which limits comparability to other studies. Staff are discouraged from accessing their work email on their off days. Oftentimes in the NICU, patient demands prevent them from checking and answering emails.

Recommendations for Practice

Although the organization's peer support program is available at all its entities, increasing the availability of services for all shifts by training more peer support leaders

could result in an increase in program utilization. In the time this study was completed, the NICU had three trained peer support leaders. One peer support leader on day shift and two for night shift. Two charge nurses were also scheduled to receive training at a later date. However, availability was dependent on the leaders' schedule and time on the unit. Six months after study completion, there are now four peer support leaders on day shift and four on night shift, leading to improved coverage of services.

There is also room for improvement regarding the dissemination of information about second victims before nurses are able to recognize themselves as one. Due to the ease of accessibility to online learning, the OLM can be disseminated to other units or entities within the organization, not just within the NICU at one hospital. This can help other healthcare providers in the organization learn about second victims and the resources that are available to them if they become one.

Improved marketing about how peer support has helped NICU team members cope may increase the use of services and allow for earlier intervention. Improved marketing of the program may also lead to decreased incidences of symptoms associated with the second victim phenomenon if NICU nurses feel supported by their peers. Further studies should be conducted to evaluate peer support program effectiveness.

Conclusion

This study showed the importance in educating NICU nurses on second victims and the organization's peer support program. Peer support programs are valuable programs that help second victims cope following a traumatic patient event. This study supports the necessity of such programs and continued support from the organization to achieve the positive outcomes this program provides. Despite the limitations of this

study, the findings may help support the need for second victim education through online methods to encourage healthcare providers to seek peer support after they are involved in a traumatic patient event.

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Tables

Table 1

Survey Questions

Survey Section	Survey Questions
Before & After the Module	Knowledge
	<ol style="list-style-type: none"> 1. The second victim phenomenon 2. Symptoms of the second victim phenomenon 3. Effects of the Second victim phenomenon 4. The organization's peer support program
	Attitudes
	<ol style="list-style-type: none"> 5. I have experienced embarrassment from these instances. 6. My involvement in these types of instances has made me fearful of future occurrences. 7. My experiences have made me feel miserable. 8. I feel deep remorse for my past involvements in these types of events.
After the Module	Skills
	<ol style="list-style-type: none"> 9. Recognizing myself as a second victim 10. Recognizing a coworker as a second victim 11. Utilizing the organization's peer support program
	Demographics
	<ol style="list-style-type: none"> 12. How have you been a NICU nurse?
	Peer Support Program Usage
	<ol style="list-style-type: none"> 13. How many times have you sought peer support from a peer support leader? 14. How likely are you to seek peer support in the future?

Table 2*SVESST Psychological Distress: Cronbach's Alpha Reliability Scores (α)*

Question	α
1. I have experienced embarrassment from these instances.	0.735
2. My involvement in these types of instances has made me fearful of future occurrences.	0.694
3. My experiences have made me feel miserable.	0.780
4. I feel deep remorse for my past involvements in these types of events.	0.709

Note. From Burlison et al., 2017.

Table 3

Two-Tailed Paired Samples t Test for the Difference Between Pre-Post Survey

Knowledge

Pre-Module Knowledge		Post-Module Knowledge		t	p	d
M	SD	M	SD			
2.28	0.75	4.54	0.60	-18.04	< .001	2.46

Note. $N = 54$. Degrees of Freedom for the t -statistic = 53. d represents Cohen's d .

Table 4*Survey Results: Before and After the Module*

Survey Item	Z	P-value
Knowledge		
1. The Second Victim Phenomenon	-0.62	.533
2. Symptoms of the Second Victim Phenomenon	-5.62	<.001
3. Effects of the Second Victim Phenomenon	-5.35	<.001
4. The organization's peer support program	-5.65	<.001
Skills		
5. Recognizing myself as a second victim	-2.99	.003
6. Recognizing a coworker as a second victim	-2.21	.027
7. Utilizing the organization's peer support program	-5.97	<.001
Attitudes		
8. I have experienced embarrassment from these instances.	-3.00	.003
9. My involvement in these types of instances has made me fearful of future occurrences.	-3.54	<.001
10. My experiences have made me feel miserable.	-2.11	.034
11. I feel deep remorse for my past involvements in these types of events.	-3.24	.001

Note. Based on an alpha value of 0.05.

Figures

Figure 1

Ranked Values of Pre-Post Module Knowledge of the Second Victim Phenomenon

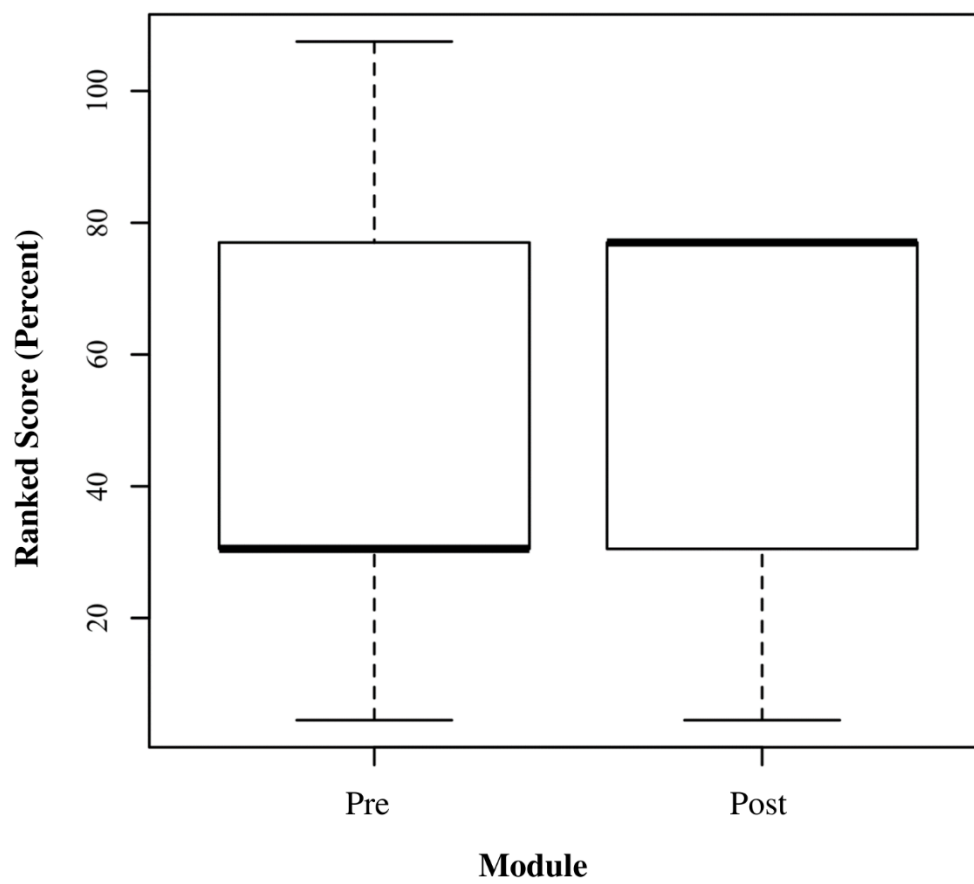


Figure 2

Pre-Post Module Survey Responses of Second Victim Phenomenon Knowledge

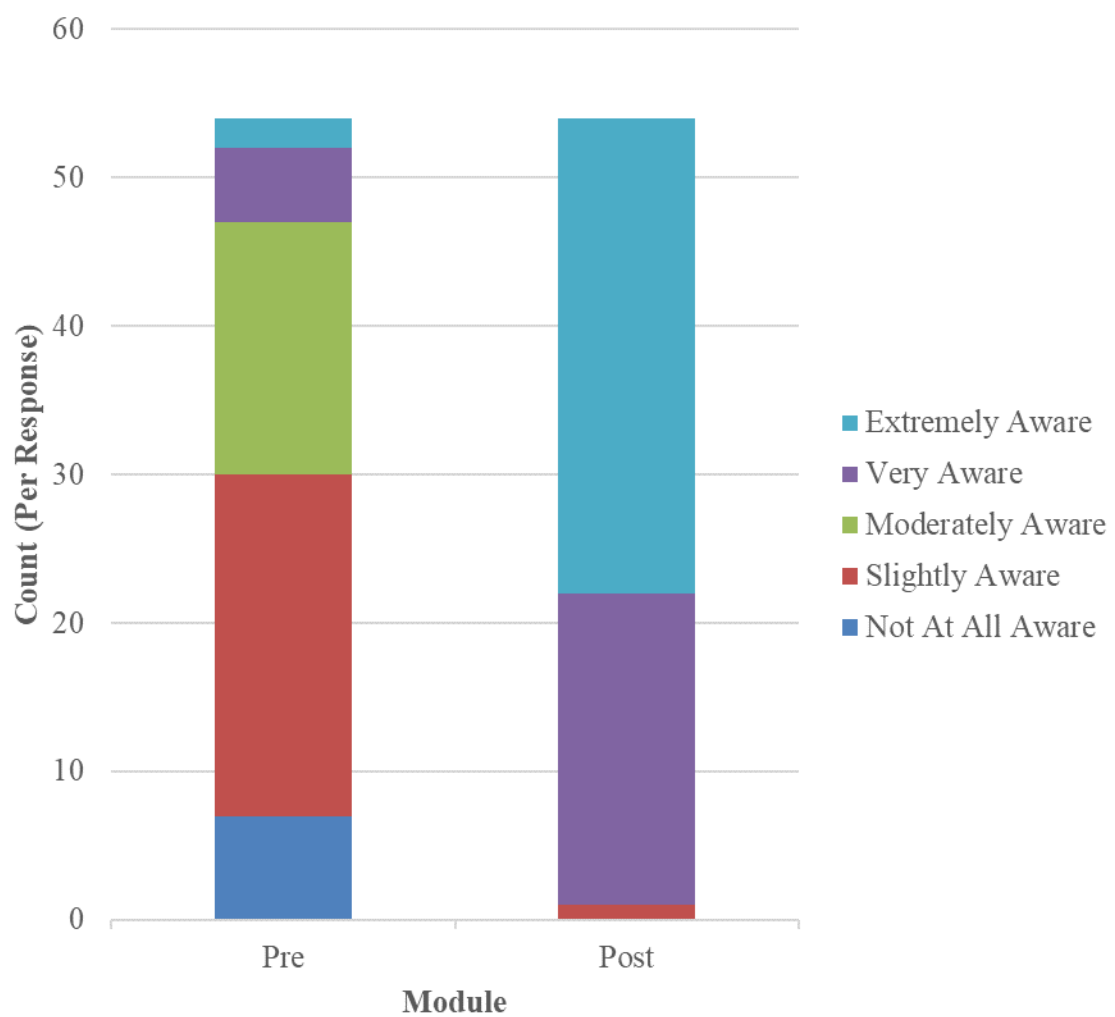


Figure 3

Ranked Values of Pre-Post Module Knowledge of Symptoms of the Second Victim Phenomenon

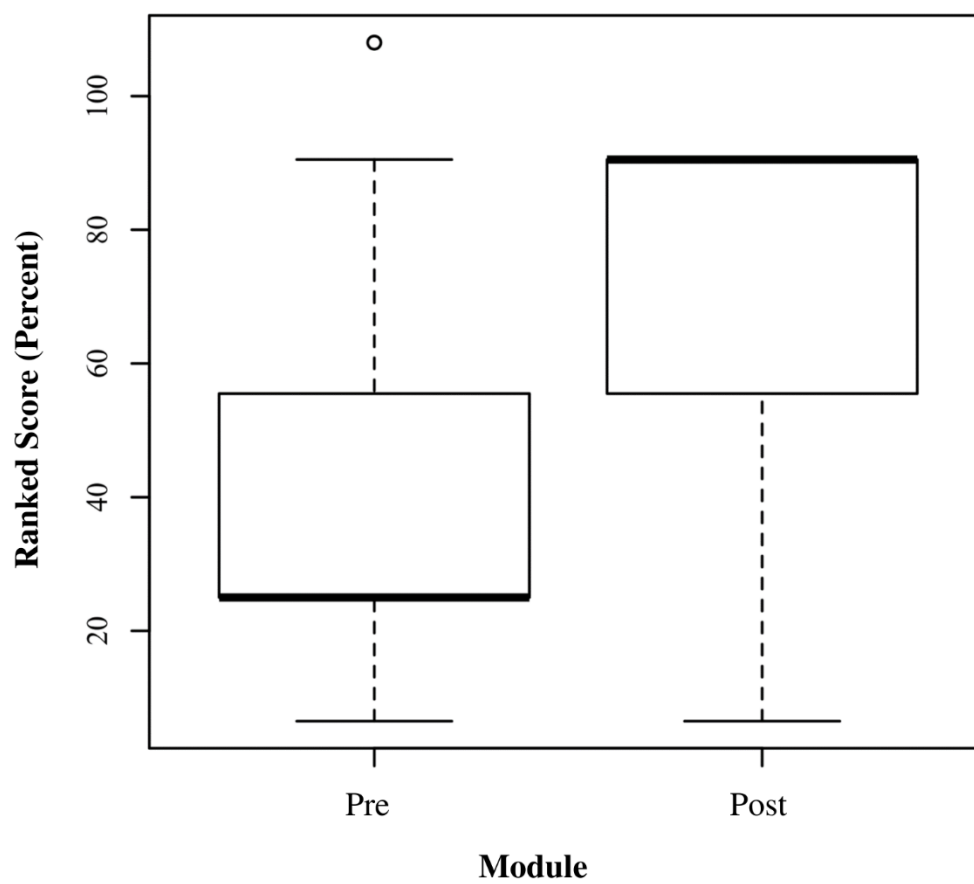


Figure 4

Ranked Values of Pre-Post Module Knowledge of Effects of the Second Victim Phenomenon

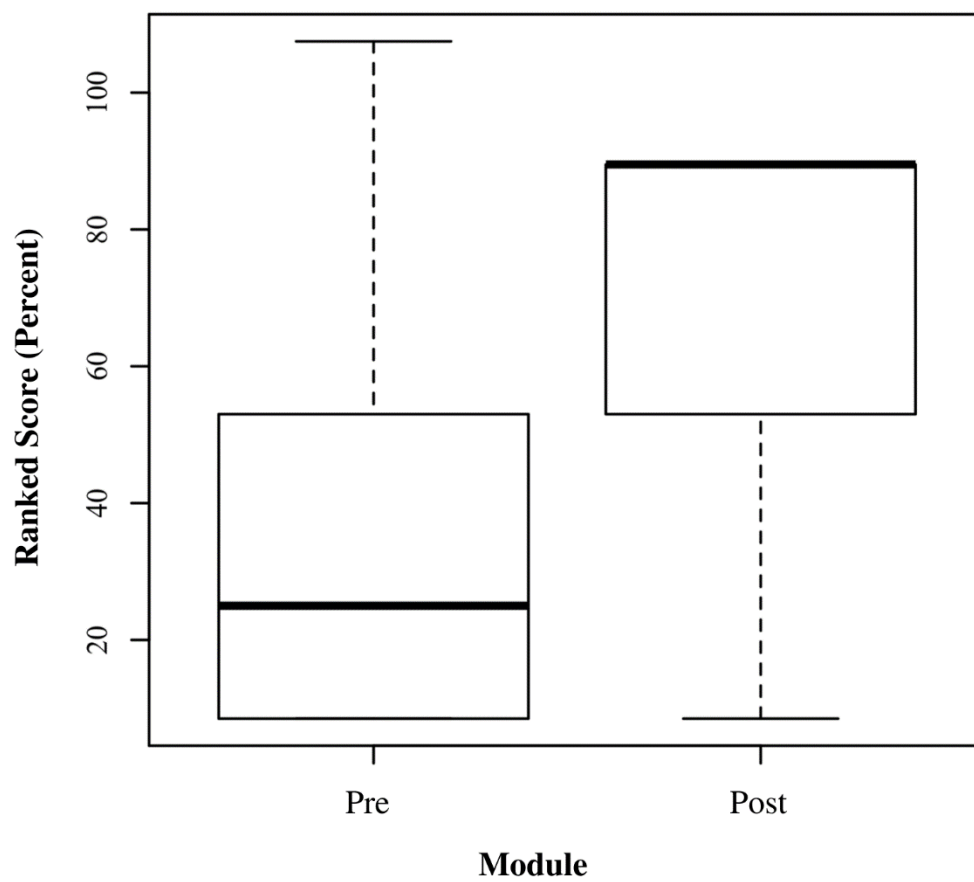


Figure 5

Ranked Values of Pre-Post Module Knowledge of the Peer Support Program

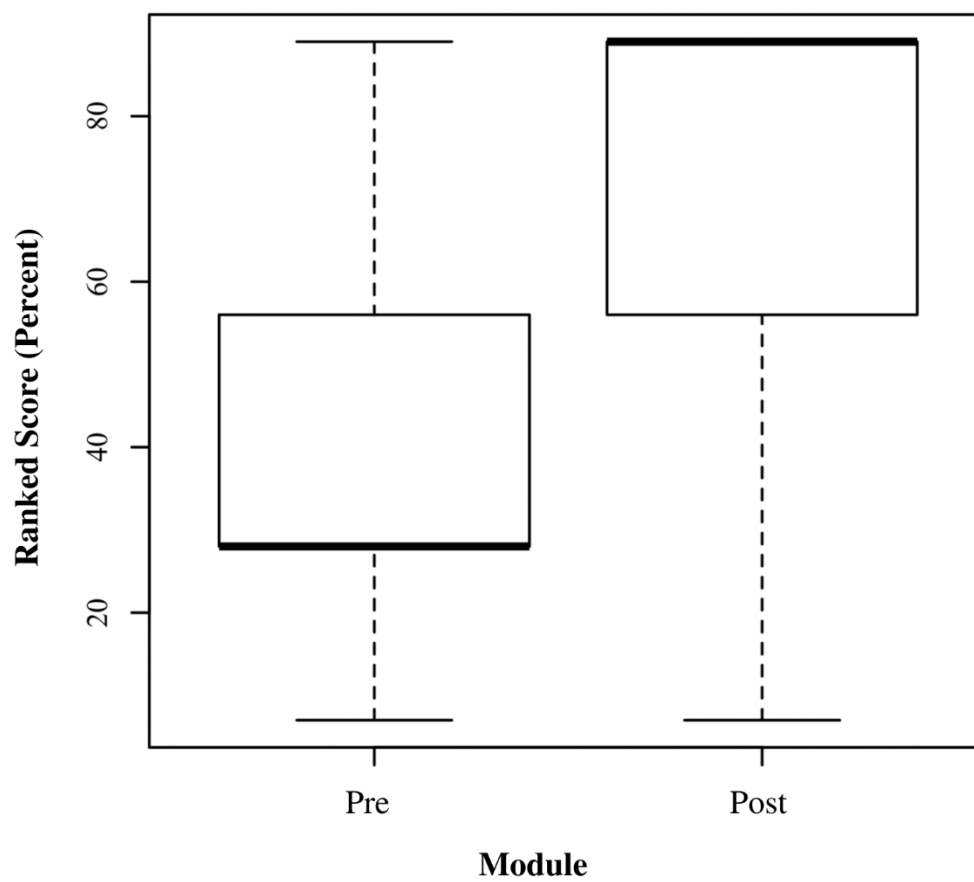


Figure 6

The Means of Pre-Post Module Survey Knowledge

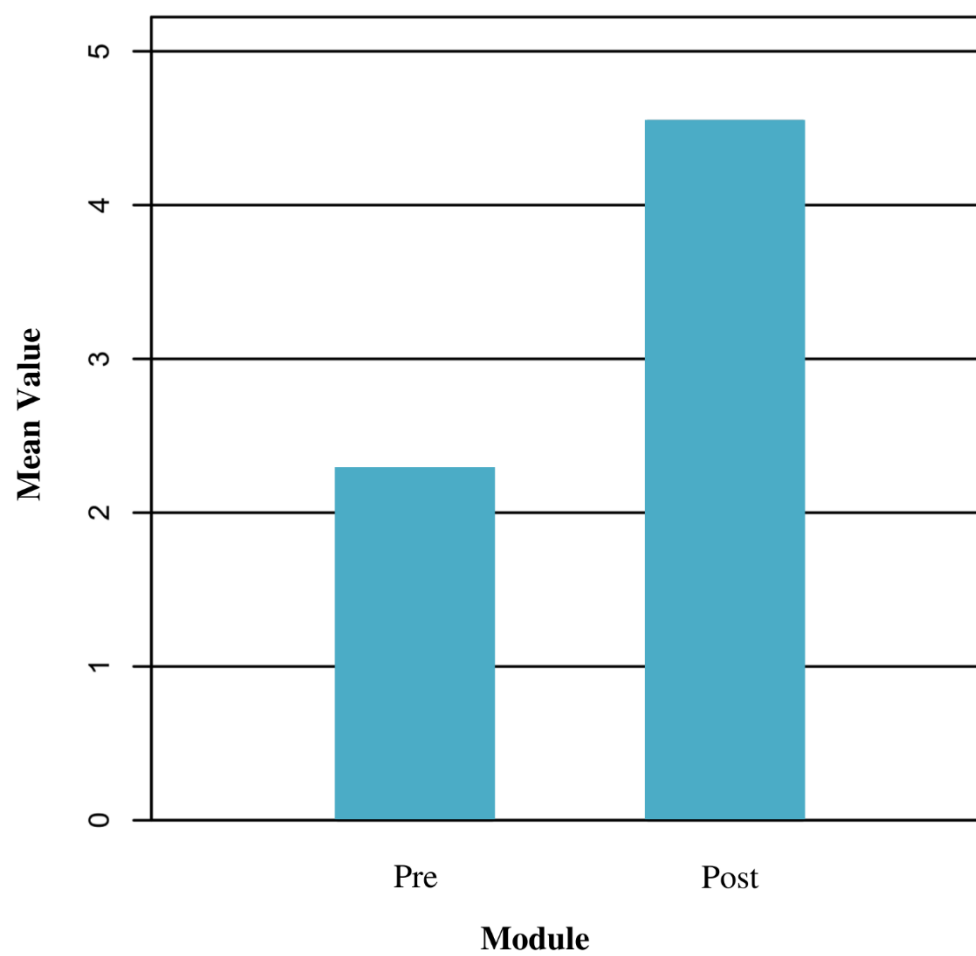


Figure 7

Ranked Values of Pre-Post Module Attitude of Embarrassment

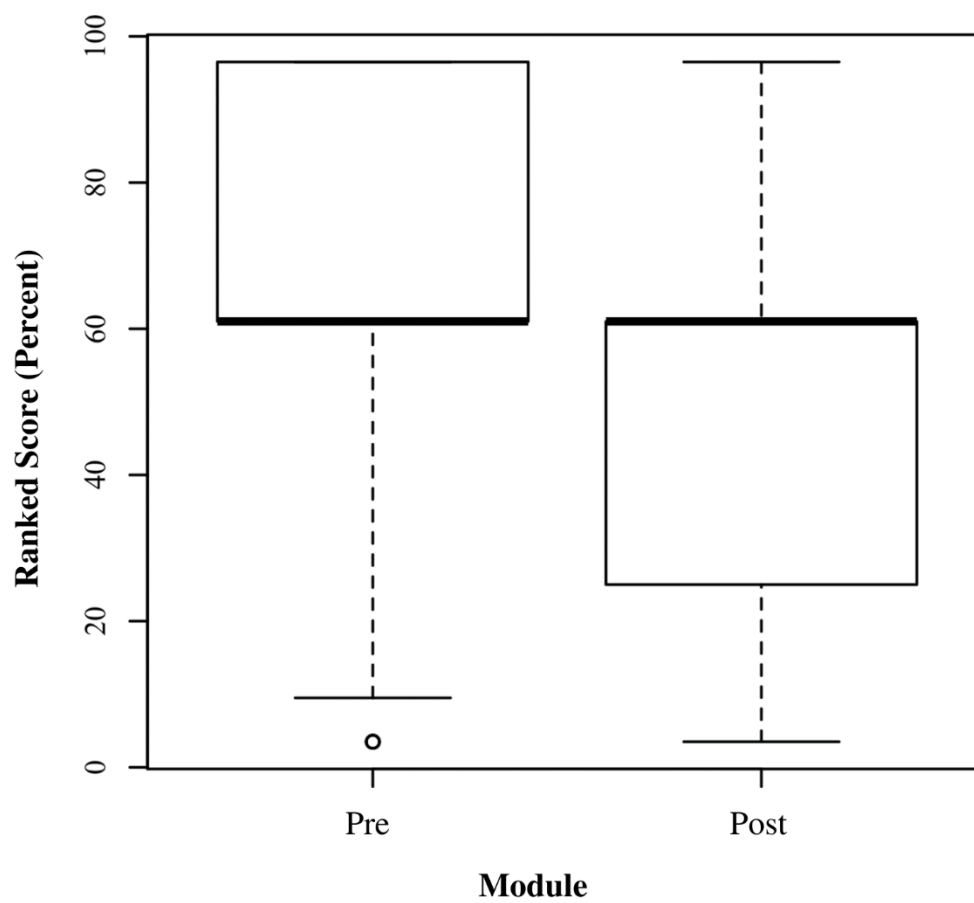


Figure 8

Ranked Values of Pre-Post Module Attitude of Fear of Future Occurrences

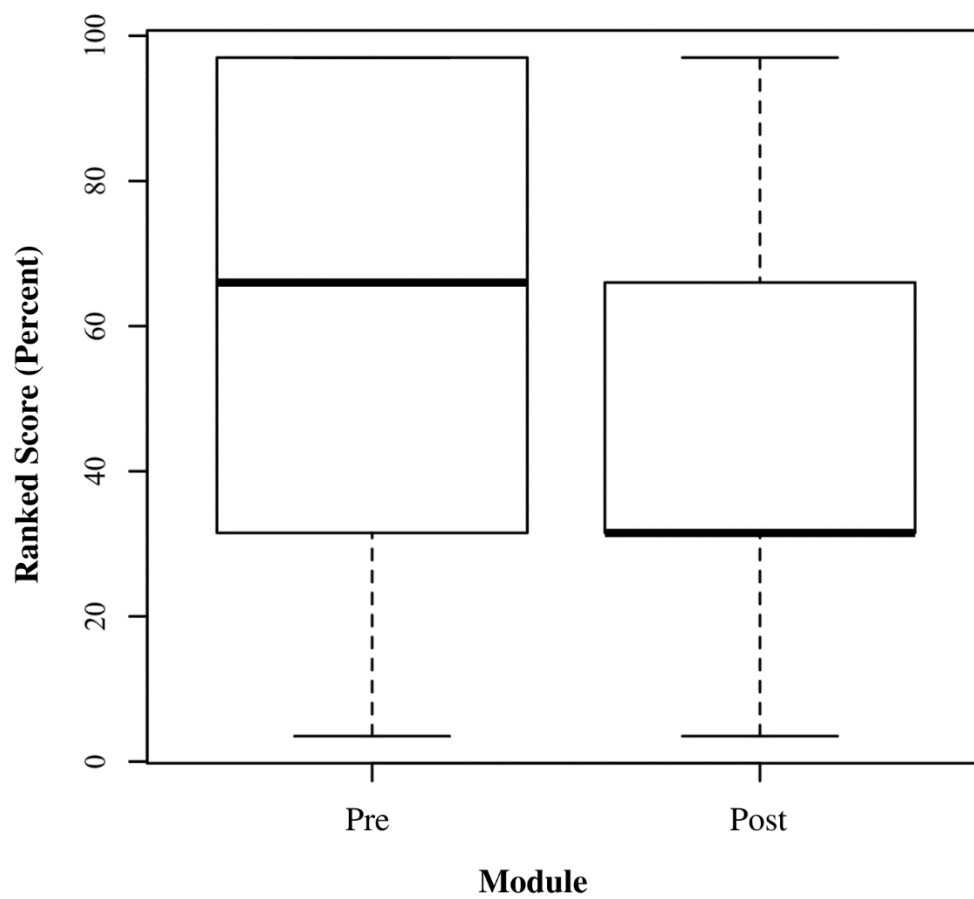


Figure 9

Ranked Values of Pre-Post Module Attitude of Misery

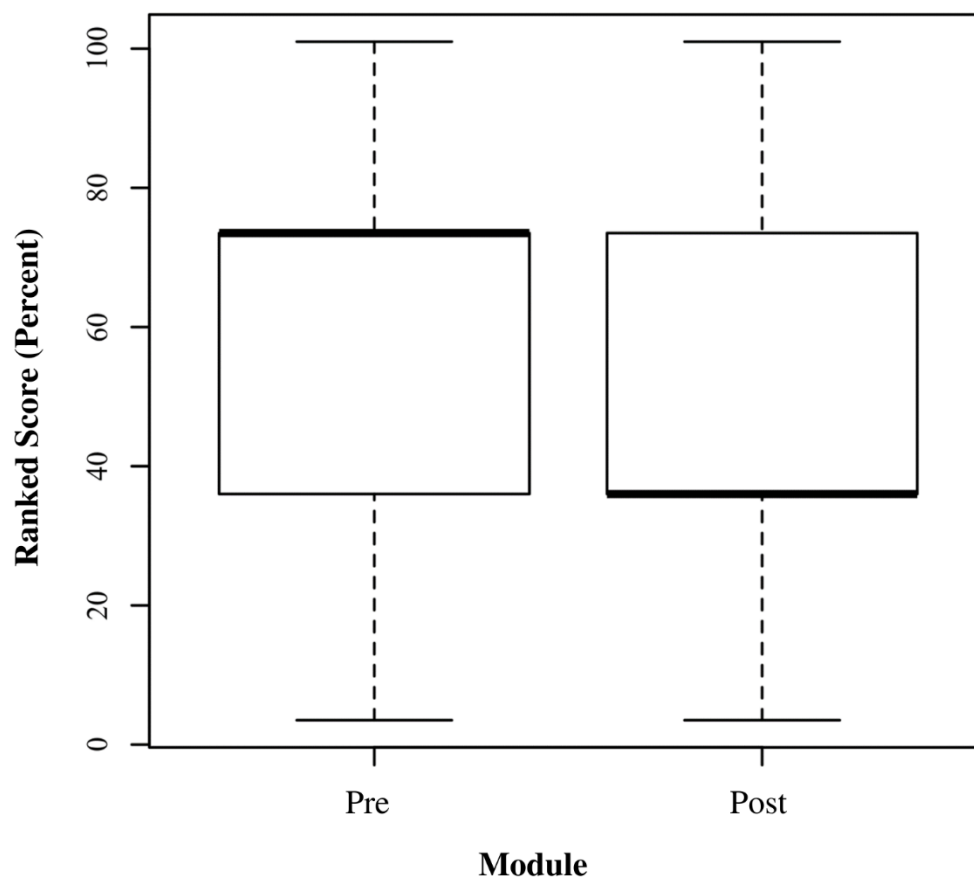


Figure 10

Ranked Values of Pre-Post Module Attitude of Remorse in Past Involvements

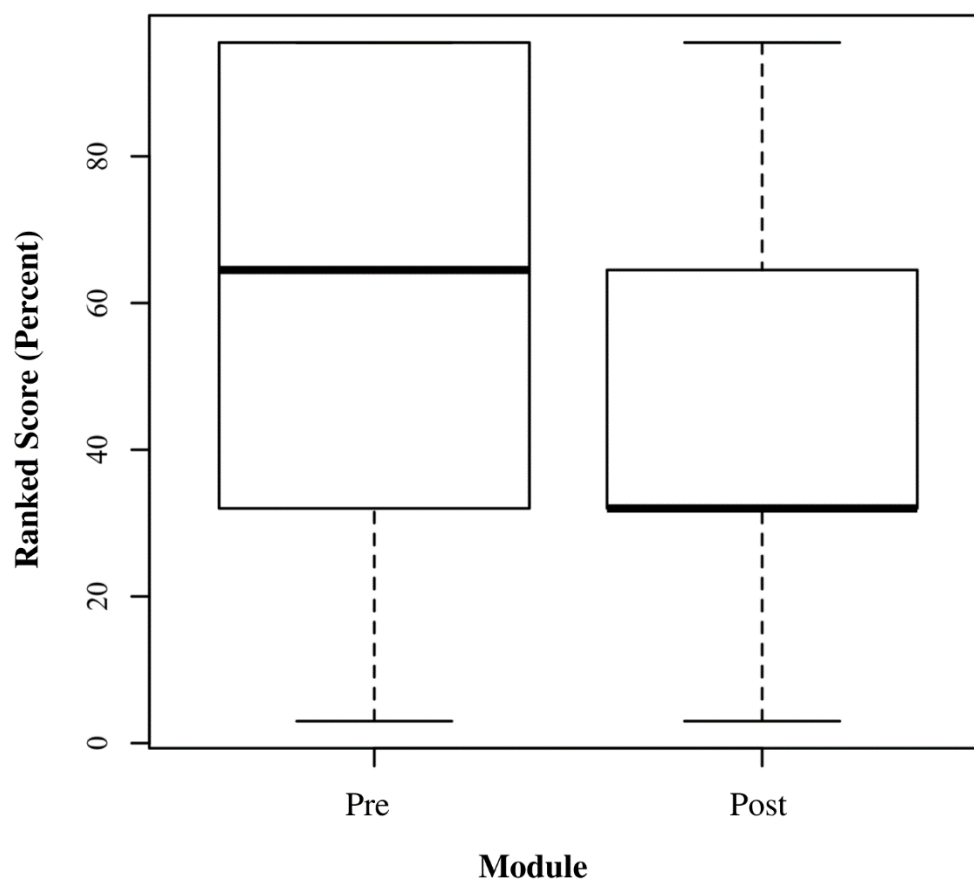


Figure 11

Ranked Values of Pre-Post Module Attitudes

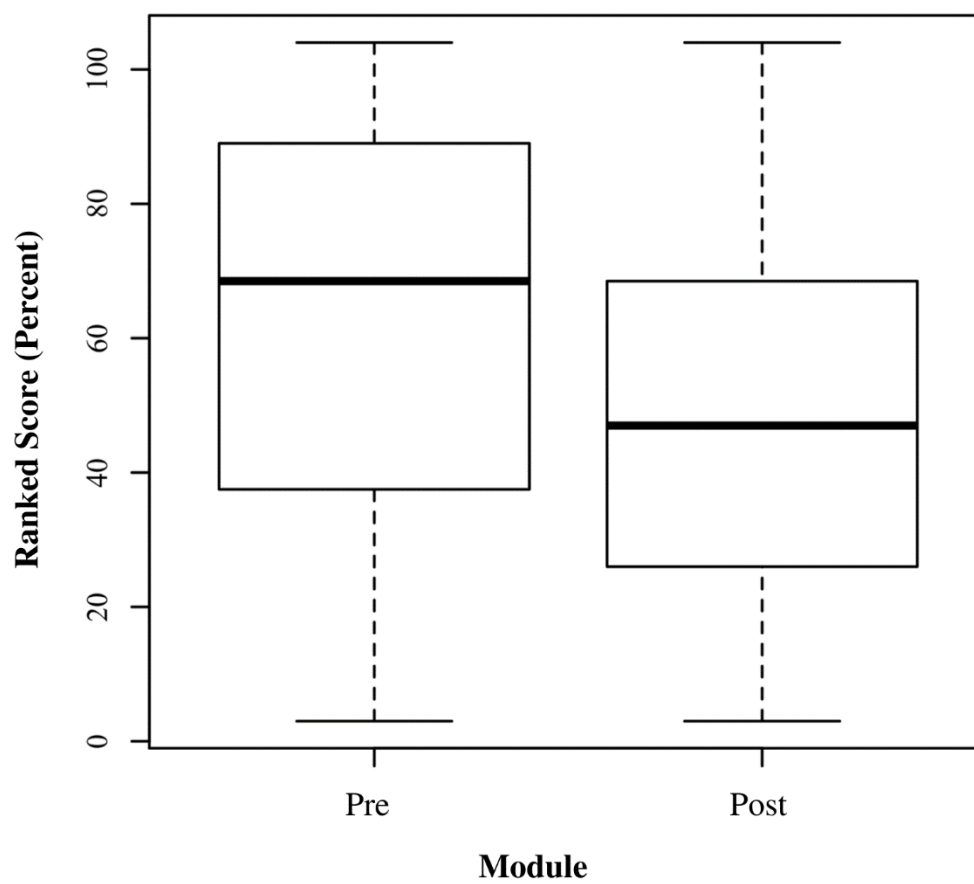


Figure 12

Ranked Values of Pre-Post Module Skill to Recognize Self as a Second Victim

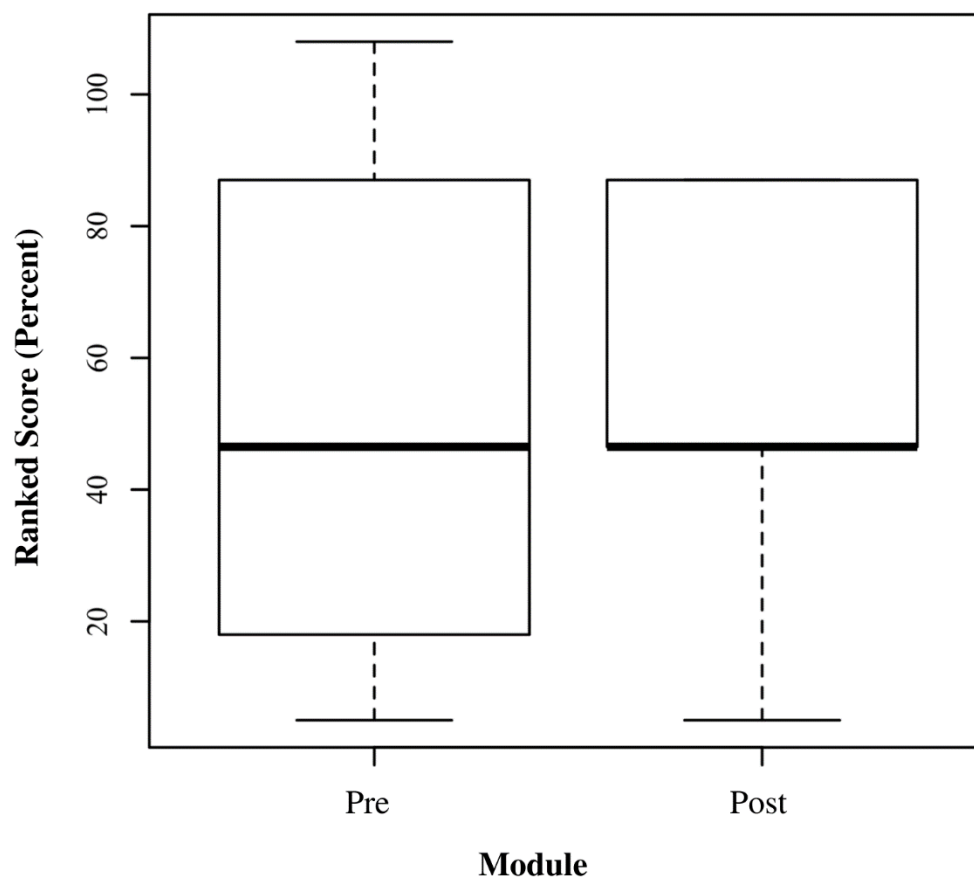


Figure 13

Ranked Values of Pre-Post Module Skill to Recognize a Coworker as a Second Victim

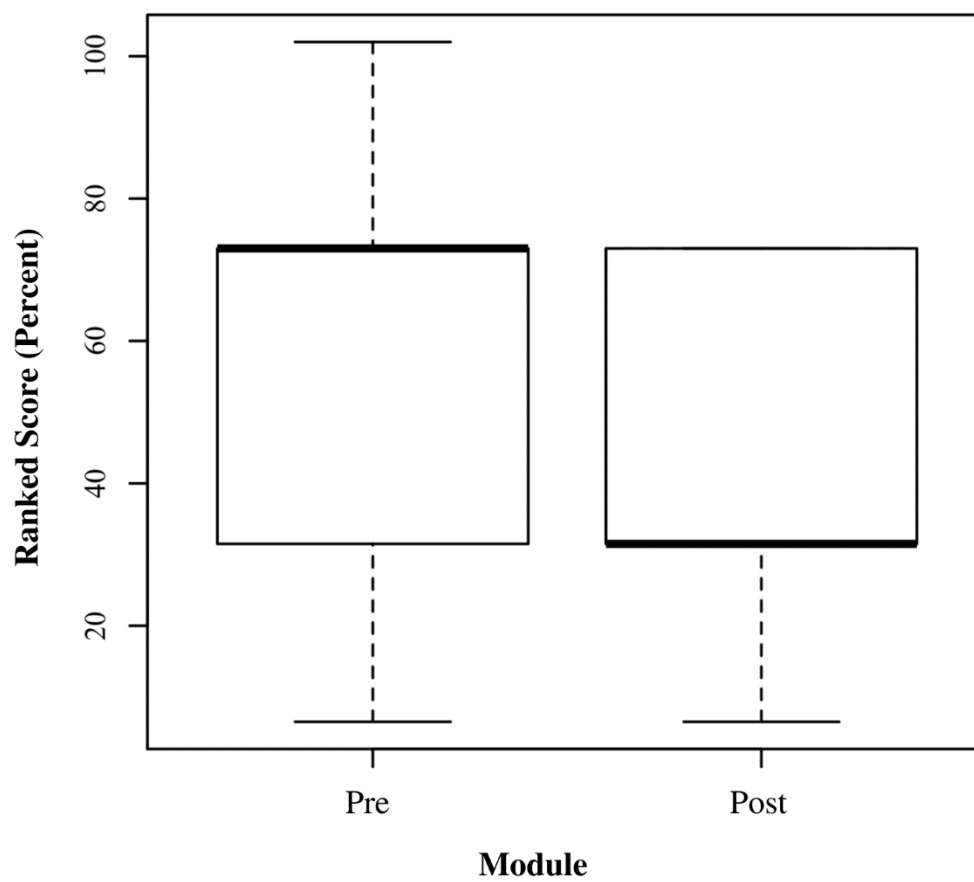


Figure 14

Ranked Values of Pre-Post Module Skill to Utilize the Organization's Peer Support Program

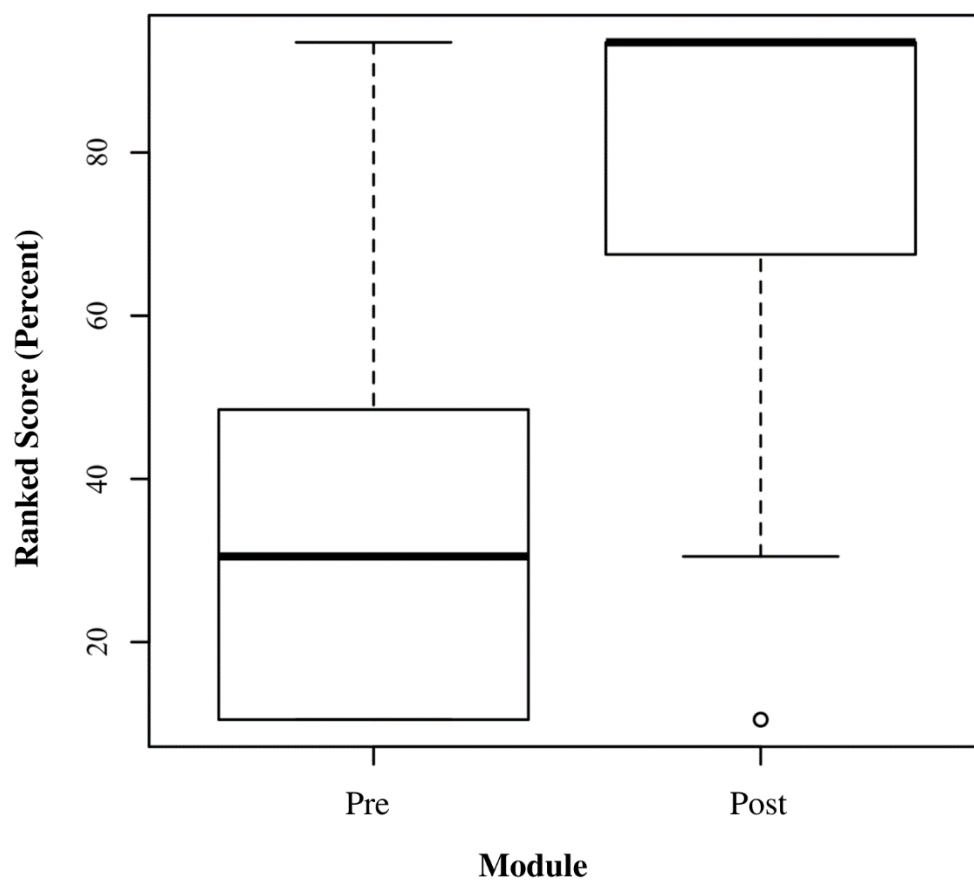


Figure 15

Ranked Values of Pre-Post Module Skills

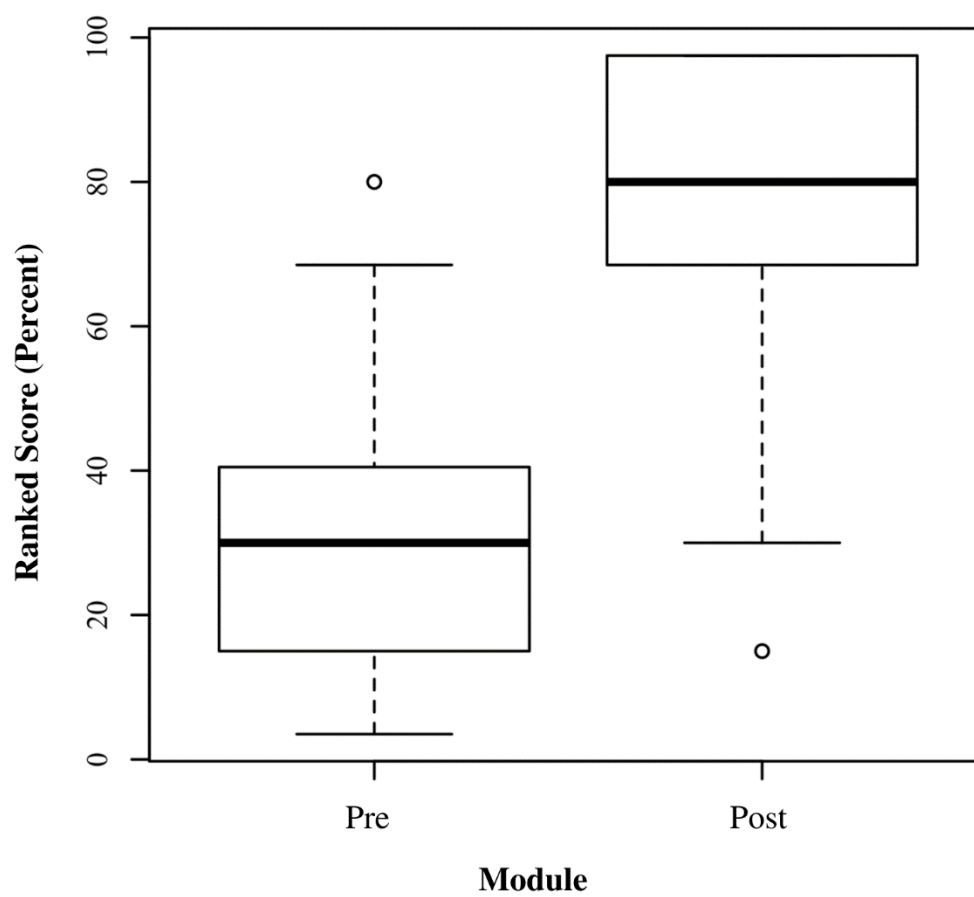


Figure 16

Demographic Question: How Long Have You Been a NICU Nurse?

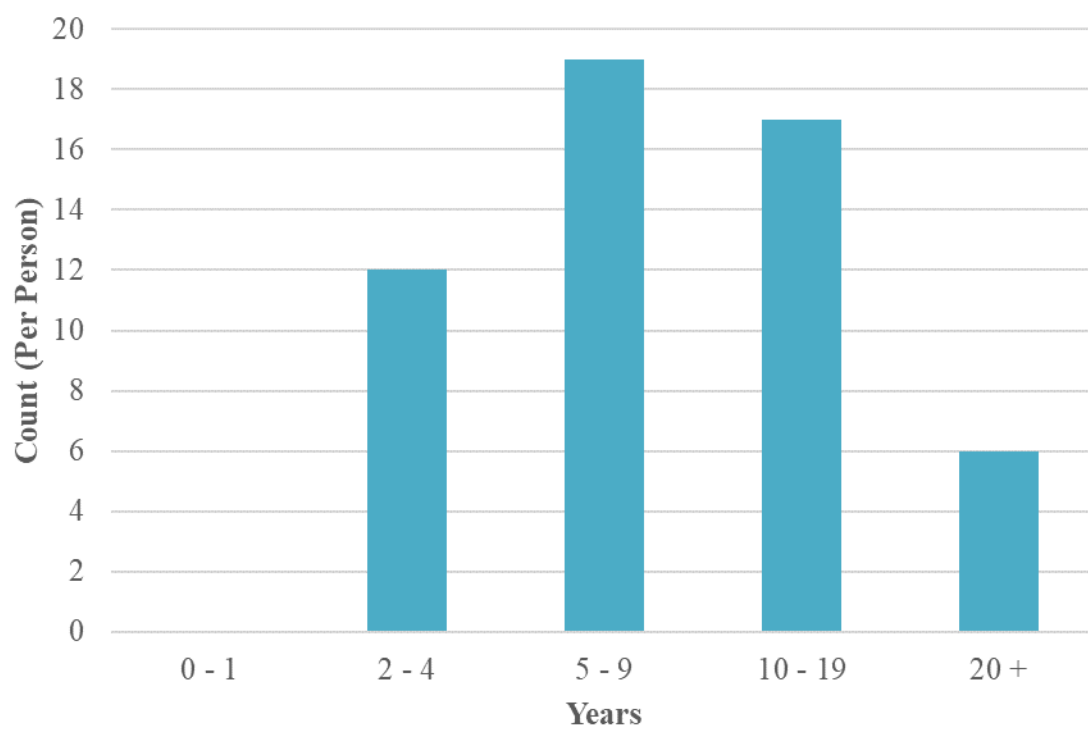


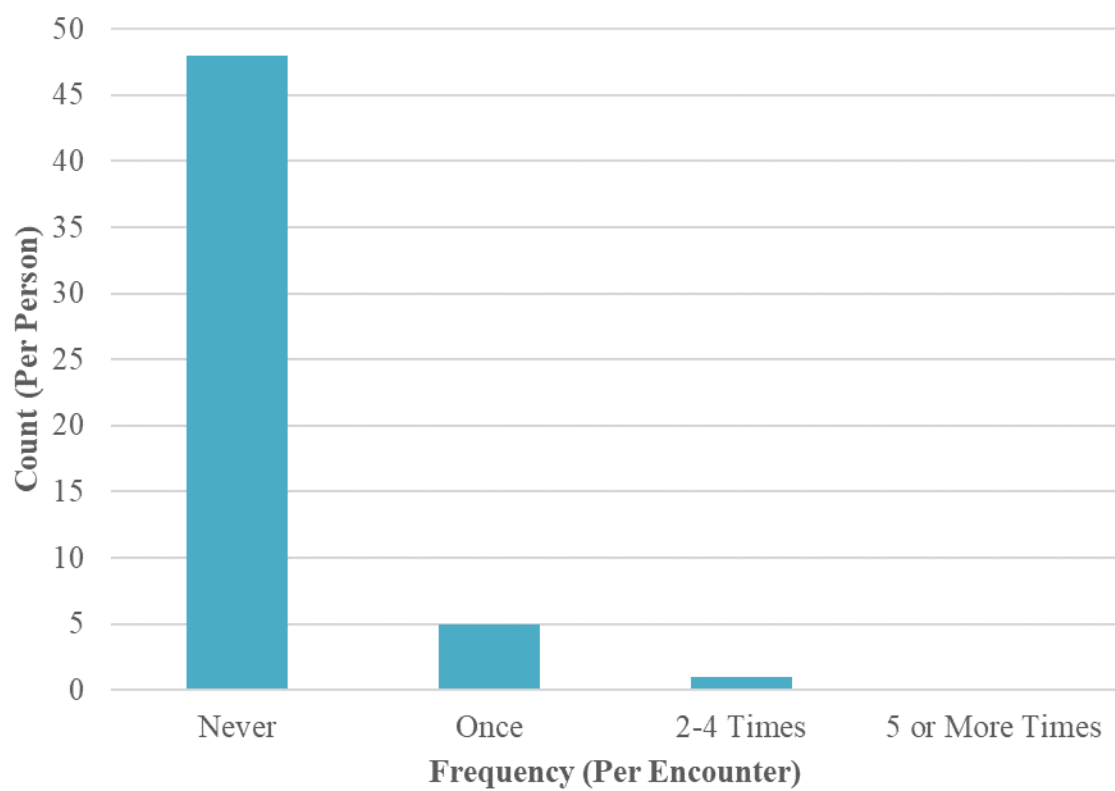
Figure 17*Peer Support Program Utilization*

Figure 18

Likelihood of Seeking Support through the Peer Support Program

